

Briefing for the EAC Public Meeting Boston, Massachusetts

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NIST “Help America Vote Act” Responsibilities

- Chair Technical Guidelines Development Committee (TGDC)
- Provide technical support to TGDC in the development of voluntary voting system guidelines including:
 - Security
 - Methods to detect and prevent fraud
 - Human factors, including technologies for individuals with disabilities

NIST/TGDC Activities

- July 2004: Chaired 1st plenary session of TGDC - adopted work plan
- September 2004: Conducted TGDC public hearings to gather data and information on human factors, privacy, computer security, transparency, core requirements and testing of voting systems
- October 2004: Posted voting software “hashes” for use by state and local election officials at National Software Reference Library Web Site:

<http://www.nsrl.nist.gov/votedata.html>

- October-December 2004: Conducted 17 TGDC Subcommittee teleconferences

NIST/TGDC Activities

- January 2005: Held second plenary session of TGDC, adopted 31 resolutions defining NIST technical guidance tasks
- February-March 2005: Completed technical guidance for most critical tasks in TGDC resolutions to affect voluntary voting system guidelines for the 2006 Election Cycle
- March, 2005: Held third plenary session of TGDC, provided feedback and endorsement of NIST draft work products, adopted one resolution
- April 2005: Held fourth plenary session of TGDC, provided initial recommendations for voting system guidelines
- August 2005: Complete second round of technical guidance tasks in TGDC resolutions
- November 2005: Complete third round of technical guidance tasks in TGDC resolutions

NIST/TGDC Committee Structure & Coordination

- TGDC resolution (*July '04*) established 3 subcommittees to gather and analyze information:
 - Security and Transparency
 - Human Factors and Privacy
 - Core Requirements and Testing
- Subcommittees meet at least every two weeks via teleconference
 - NIST voting team staff participates in teleconferences
 - Public provided access to teleconferences via the Internet
- NIST and subcommittee members conduct occasional face to face meetings
- Research and coordination done in-between subcommittee meetings
- Results of sub-committee research presented at TGDC plenaries

Resolutions and NIST Work Products

- TGDC plenaries are held to discuss issues, review work products and achieve consensus
- Resolutions adopted at TGDC Plenary Sessions by consensus
- Thirty-one resolutions adopted at January TGDC Plenary requesting NIST to conduct research and draft standards
- At March TGDC Meeting, NIST provided 22 separate draft work products that responded to resolutions
- One additional resolution adopted at March TGDC Plenary
- At April TGDC Meeting, NIST provided the initial recommendations for voluntary voting system guidelines

Developing an Implementation Strategy

- First goal is to develop the best long-term guideline possible
 - Building on the strengths of the 2002 VSS
 - Changing areas that needed improvement
 - Reorganizing the requirements
- Second goal is to provide guidance to states in time for the 2006 election cycle
 - Implies need to minimize changes to 2002 VSS
 - While also filling in 2002 VSS gaps
- Thus, two guidelines will be developed
 - An augmented 2002 VSS
 - A new redesigned voting system guideline

The Augmented 2002 VSS

- Improves the 2002 VSS by filling in gaps (accessibility and usability, VVPAT, wireless, and others)
- Correcting errors in the 2002 VSS
- Issues facing the states (e.g., helping to ensure that installed voting system software is the software that has been tested)

NIST Progress In Development of Work Products

- For consideration at the March 9 TGDC Plenary, NIST submitted 22 separate preliminary reports
- Feedback from March plenary was that NIST should continue to develop technical support and related work product consistent with these preliminary reports
- NIST produced the initial set of recommendations for the April TGDC meeting
- Initial set of recommendations consists of the completed augmented 2002 VSS and will be called the Voluntary Voting System Guidelines (VVSG), Version 1

New Areas Addressed/Enhanced in VVSG, version 1

- Conformance Clause
- Human Factors
- Security
 - Overview
 - VVPAT
 - Wireless
 - Software Distribution and Setup Validation
- Glossary
- Error Rates

Organizational Changes

- Best Practices for Voting Officials
- Process
- Structure of Requirements

Best Practices for Voting Officials

- VSS 2002 contained requirements for voting systems and testing entities
- Requirements in VVSG for wireless, VVPAT, human factors, etc. depend on voting officials developing and carrying out appropriate procedures
- VVSG contains best practices for voting officials
- These requirements are not testable and conformance can not be determined
- Best Practices for Voting Officials are contained in Appendix C of Volume I

Process

- VSS 2002 defined three major voting stages of voting:
 - Pre-voting
 - Voting
 - Post-voting
- New sections designate which stage the requirements pertain to
- VVSG Version 2 will contain a more detailed process model

Structure of Requirements

- New sections of the VVSG contain a more structured approach
- Each requirement is numbered according to a hierarchical scheme
 - Higher level requirements are supported by lower level requirements
 - Higher level requirements may not be directly testable but can be “indirectly” tested via their lower level requirements

“Grandfathering” Issue

- When drafting our recommendations, should we be sensitive to the current and planned practices of the various states? Examples:
 - VVPAT
 - Good accessibility introduces new requirements
- Three sub-committee Chairs all agree that the TGDC should develop the best technical guidelines possible
- The EAC can handle any difficulties that arise during a transition to the new guidelines by issuing appropriate "grandfathering" rules
- This is not a one-time issue. Technology changes and thus specs change over time
 - Municipalities may always be out of spec

Need To Prioritize

- TGDC passed 31 resolutions at January plenary
- Resolutions requested NIST's technical assistance
- In order to be responsive to voting community, resolutions need to be prioritized

Grouping the Priorities

- **Group 1**
 - Work targets the highest priority resolutions
 - Work augments and corrects the 2002 VSS
 - Guidance and requirements in April
- **Group 2**
 - Work targets the second highest priority resolutions
 - Work develops a new guideline
 - Builds upon the 2002 VSS but enhances security, human factors and the precision and testability of requirements
 - Initial work products in April
 - Plans for completion in November
- **Group 3**
 - Work targets the remainder of the resolutions
 - They will be addressed after April
 - Plans for completion in November

Group 1

- Requirements for VVPAT, including DREs with attached printers
 - *Resolution: 12-05 and TGDC/EAC requests*
- Accessibility and usability requirements based on current technology
 - *Resolutions: 2-05, 3-05, 4-05, 9-05*
- Software distribution and setup validation procedures, including use of the NSRL
 - *Resolutions: 15-05, 16-05*
- Use of wireless technology
 - *Resolution: 35-05*
- Interim conformance clause
 - *Resolution: 24-05*
- Revised glossary
 - *Resolution: 33-05*

Group 2

- Analysis of 2002 VSS
 - *Resolutions: 25-05, 29-05*
- Analysis of voter verifiability
 - *Resolution: 12-05*
- Additional requirements and test methods for human factors and accessibility
 - *Resolutions: 2-05, 3-05, 4-05, 5-05, 6-05, 8-05, 9-05*
- Test strategies and analysis, addressing COTS software, documentation requirements, non-conformant voting systems, and publicly available test suites and test reports
 - *Resolutions: 14-05, 17-05, 18-05, 25-05, 26-05, 27-05, 28-05*
- Strategy for addressing multiple representation of ballots
 - *Resolution: 21-05*
- Analysis of federal and consensus standards for applicability to voting
 - *Resolution: 22-05*
- Draft of next version of the VSS
 - *Resolutions: 24-05, 25-05, 29-05, 33-05*

Group 3

- Usability of the Standards
 - *Resolution: 10-05*
- Common ballot format specifications
 - *Resolution: 23-05*
- Quality management standards
 - *Resolution: 30-05*
- Maintenance of the VSS
 - *Resolution: 31-05*
- Sharing information and de-qualification of voting systems
 - *Resolution: 32-05*
- Assessment papers on recommendation for future work
 - *Resolution: 34-05*